

## Claims

1. (Original) A side-scattering light guide, comprising:

a transparent optically homogenous elongate core to transmit light along the core from end to end;

an optically transmitting sheath, having a lower refractive index than the core, surrounding and in contact with the sides of the core;

diffuser particles within the core, the diffuser particles being transparent, having a refractive index close to that of the core, high optical transmittance, low back reflectance and low absorbance, and being distributed to scatter light being transmitted along the core so that at least some of the scattered light exits the sides of the core; and,

a jacket of diffusing material arranged to intercept scattered light exiting the sides of the core.

2. (Canceled)

3. (Original) The side scattering light guide of claim 1, wherein the ratio of the diffuser particles' refractive index to that of the core varies by less than 1% over the light's wavelength range.

4. (Canceled)

5. (Currently Amended) The side scattering light guide of ~~any preceding~~ claim 1, wherein the diffuser particles have a size substantially greater than the light's average wavelength.

6. (Currently Amended) The side-scattering light guide of ~~any preceding~~ claim 1, wherein the ~~lower refractive index~~ optically transmitting sheath surrounding said core is transparent or translucent.

7. (Canceled)

8. (Currently Amended) The side-scattering light guide of claim 17, wherein an outer layer of the optically transmitting sheath forms the ~~diffusing~~ jacket of diffusing material.

9. (Currently Amended) The side-scattering light guide of claim 85, wherein ~~a non-smooth~~ the outer layer of the sheath ~~forms the diffusing jacket~~ is non-smooth.

10. (Currently Amended) The side-scattering light guide of claim 1, wherein a rough outer surface of the core forms the ~~diffusing~~ jacket of diffusing material.

11. (Currently Amended) The side-scattering light guide of claim 107 wherein the rough outer surface is produced by a high concentration of diffuser particles in the core.

12. (Currently Amended) The side-scattering light guide of ~~any preceding~~ claim 1, wherein the ~~diffusing~~ jacket of diffusing material surrounds only part of the core.

13. (Canceled)

14. (Canceled)

15. (Currently Amended) The side-scattering light guide of claim 14, wherein the jacket of diffusing material ~~of the diffusing jacket~~ is a translucent diffuser.

16. (Currently Amended) The side-scattering light guide of claim 15 wherein the jacket of diffusing material is formed of one of polyethylene, PMMA, PTFE, ABS, PVC, or glass.

17. (Canceled)

18. (Currently Amended) The side scattering light guide of ~~any one of claims 1 to 13,~~ wherein the ~~diffusing jacket~~ of diffusing material is a reflecting diffuser.

19. (Currently Amended) The side-scattering light guide of claim 18, wherein the ~~material of the diffuser jacket~~ of diffusing material is opaque and reflective.

20. (Currently Amended) The side-scattering light guide ~~of any one of claims 1 to 13,~~ wherein the ~~diffuser jacket~~ of diffusing material is both transmitting, and reflective.

21. (Currently Amended) The side-scattering light guide of ~~any one of~~ claims 1 ~~to 13~~, wherein parts of the ~~diffuser~~ jacket of diffusing material are transmitting, and other parts are reflective.

22. (Currently Amended) The side-scattering light guide of claim 19, wherein the ~~diffuser~~ jacket of diffusing material is ~~opaque, reflective, and~~ apertured.

23. (Currently Amended) The side-scattering light guide of claim ~~22~~16, wherein the apertures are surrounded by a transmitting diffuser.

24. (Currently Amended) The side-scattering light guide of claim ~~22~~16, wherein the aperture is a longitudinal slit.

25. (Canceled)

26. (Canceled)

27. (Canceled)

28. (Currently Amended) The side-scattering light guide of claim 1, wherein the diffuser particles are formed of polymeric material, glass or quartz ~~such as a cross-linked polymer, for instance PMMA, or polystyrene.~~

29. (Canceled)

30. (Canceled)

31. (Currently Amended) The A side-scattering light guide ~~according to any preceding~~ of claim 1, further comprising one or more optical elements adjacent a side of the light guide to collect and direct side-scattered light from said side-scattering light guide.

32. (Currently Amended) The A side-scattering light ~~guide~~ ~~according to~~ of claim ~~31~~20, wherein the optical element is a lens, a mirror or a diffractive element.

33. (Canceled)

34. (Canceled)

35. (Currently Amended) The A side scattering light guide ~~according to~~ of claim 1, wherein the low refractive index sheath is formed of a fluoropolymer or silicone polymer.

36. (Currently Amended) The A side scattering light guide ~~according to~~ of claim 1, where the low refractive index sheath is formed of at least one of: poly-tetrafluorethylene (PTFE); copolymers of polytetrafluoroethene and hexafluoropropylene (FEP); and tetrafluorethylene-perfluoralkoxethylene copolymers (PFE); fluoro silicone polymers; polydimethylsiloxane polymers; and polymethylphenylsiloxane polymers.

37. (Currently Amended) The A side scattering light guide ~~according to~~ of claim 1, wherein the sheath is a volume of free space.

38. (Currently Amended) The A side scattering light guide ~~according to~~ of claim 1, wherein the sheath is ~~gas~~ fluid.

39. (Canceled)

Should there be any questions or remaining issues regarding the foregoing, Examiner is cordially invited to telephone the undersigned attorney for a speedy resolution.

Respectfully requested,

A handwritten signature in black ink, appearing to read "Robert A. Parsons". The signature is fluid and cursive, with a large initial "R" and "P".

Robert A. Parsons  
Attorney for Applicant  
Registration No. 32,713

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**CUSTOMER NUMBER 29370**  
4000 North Central Ave., Suite 1220  
Phoenix, Arizona 85012  
(602) 252-7494